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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,888	05/29/2002	Edward E Williams	194-15537-WO-US	5542

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EXAMINER	
CECIL, TERRY K	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/009,888	WILLIAMS, EDWARD E	
	Examiner	Art Unit	
	Mr. Terry K. Cecil	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2004* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *13-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC ' 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-6, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Schuk et al. (U.S. 3,760,829) as evidenced by Pressley et al. (U.S. 3,732,164), hereinafter "Pressley" (Schuk incorporates by reference the subject matter of Pressley, see col. 1, first paragraph). As shown in figure 2, Schuk discloses a system for disinfecting wastewater comprising a plurality of injectors spaced along a flow path in communication with a chlorine supply (the use of injectors is cited in col. 10, line 53 of Pressley). The dosing of chlorine is controlled by respective valves 9 and 15 coupled to a control system (6, 8, 11, 13, 14) [as in claims 1-2 and 4]. The control system operates the valves in response to outputs from sensors (e.g. 4, 5 and 12) [as in claim 5] and also a flow rate meter 1 [as in claim 6]. As for the limitation of the flow control device being *regulated to maintain* a lesser regulated flow of disinfectant through each injection device than a regulated flow of disinfectant through an injection device located upstream therefrom, the examiner interprets such to be a manner of operating the device that does not differentiate the apparatus from the apparatus of Schuk. As shown by Schuk's equation [(ABC) –F] *D=E (col. 5, line 65) governing the injection of the chlorine into the flow path, the apparatus of Schuk has the ability to perform as in the aforementioned manner of using. For example, when the amount of chlorine injected at 15

necessary to adjust the pH to a predetermine value is greater than the amount injected at 9 necessary to complete the removal of ammonia (as described at col. 6, lines 25-29), the claimed manner of using is performed. Further such a manner of using would be *maintained* until the inlet stream conditions changed.

As shown in figure 3 of Pressley, Schuk also discloses supplying product water as a dosing liquid to the chlorine (col. 5, lines 49-52 of Pressley)[as in claim 10].

Schuk also discloses systems where post-treatment is effected in carbon columns downstream of the chlorination (see col. 10, lines 6-61 of *Pressley*) [as in claim 12] and pre-treatment to remove lime (col. 5 lines 32-37; col. 6, line 5-7) [as in claim 11].

3. Claims 1-2, 4-7 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 57-187090, hereinafter '090. As shown in figure 1, '090 discloses a system for disinfecting wastewater comprising a plurality of injectors (19, 17 and 18) spaced along a flow path in communication with a chlorine supply 16, wherein the dosing of chlorine is controlled by respective valves coupled to a controller 14 [as in claims 1-2, 4 and 7]. The control system operates the valves in response to outputs from sensors (e.g. 11, 12, 13, and 15) [as in claim 5] and also a flow rate meter 1 [as in claim 6]. '090 also teaches pretreatment in reservoir 1 and post treatment in reservoir 8 [as in claims 11-12]. As for the limitation of the flow control device being *regulated to maintain* a lesser regulated flow of disinfectant through each injection device than a regulated flow of disinfectant through an injection device located upstream therefrom, the

examiner interprets such to be a manner of operating the device that does not differentiate the apparatus from the apparatus of '090. The examiner contends that the apparatus of '090 has the ability to perform the aforementioned manner of using. As described in the English translation thereof, dispensing of disinfectant at the mid point chlorination 17 is governed by sensor 15 and dispensing of chlorine at the latter stage is determined by sensor 21 and is only for inhibiting revivals of germs (page 11) such that the apparatus of '090 performs the aforementioned manner of using whenever the amount added at point 18 to maintain a desired free chlorine residual is less than that added at the midpoint as determined by sensor 15. As for claim 7, injection 19 enables a more-than-two injector configuration and the valve/sensor/controller 14 configuration allows the apparatus to be used in the manner claimed.

4. Claims 1-3, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Sarunac (U.S. 4,997,574).

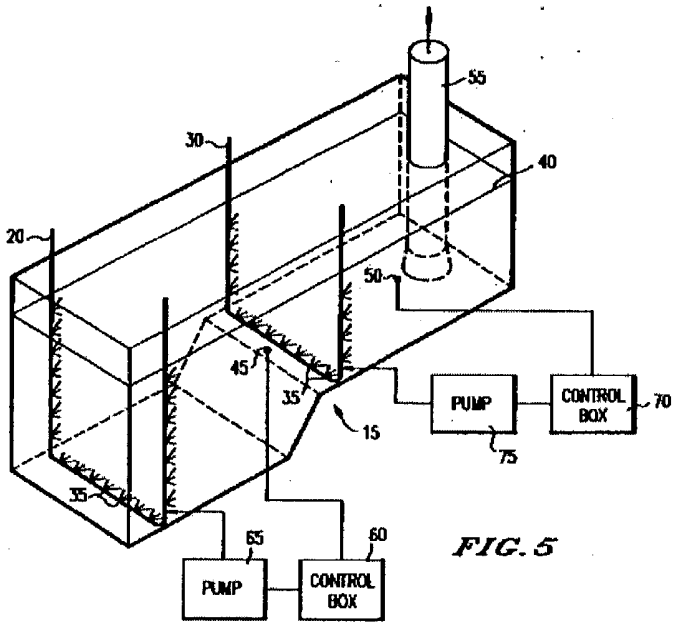


FIG. 5

As shown in figure 5 above, Sarunac teaches a contact tank defining an elongated passageway [as in claim 3] including a plurality of stages of injection devices (e.g. 20, 30) each including a group of injectors [as in claim 9], wherein flow control of disinfectant (e.g. Chlorine) [as in claim 2] is provided by pump 65, control box 60 and sensor 45 of a conduit arrangement [as in claim 1]. Note that the limitation of the flow control device being *regulated to maintain* a lesser regulated flow of disinfectant through each injection device than a regulated flow of disinfectant through an injection device located upstream therefrom, is interpreted to be a manner of operating the device that does not differentiate the apparatus from the apparatus of '090. Since the amount of chlorine dispensed by each injector line is determined by respective sensor (45, 50 etc.), the apparatus of Sarunac has the ability to perform the aforementioned manner of using.

> control box 65 and pump 70. Although only two chlo-
> 60 rine injection stages and two measurement points are shown, it should be understood that more than two injection stages each including one or more associated measurement points in the boundary layer are possible, for example—one measurement point adjacent each
> 65 wall, depending upon the length of the intake bay 15. For typical intake bay dimensions of 40 feet in length, 25 feet in depth and 12 feet in width, the use of 2 to 4 chlorine injection stages each having one measurement-

As shown in the text above, Sarunac also teaches more than two injection stages [as in claim 7].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarunac. Sarunac, as expanded above teaches a plurality of injection stages (e.g. 2-4) that depend upon the size of the contact tank. Claim 8 has the limitation of the injectors being equally spaced. It is considered that it would have been obvious to one ordinarily skilled in the art at the time of the invention to for the injector stages to be equally space in order to efficiency treat the total length (volume) of the tank.

Response to Arguments

7. Applicant's arguments filed 4-12-2004 have been fully considered but they are not persuasive because of the following reasons:

- Applicants main argument is that none of the references have flow control devices that are regulated to maintain a lesser regulated flow of disinfectant through each injection device than a regulated flow of disinfectant through an injection device located upstream therefrom. In response, the examiner points out the following reproduced from 2114 of the MPEP.

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >*In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re*

MANNER OF OPERATING THE DEVICE DOES NOT DIFFERENTIATE APPARATUS CLAIM FROM THE PRIOR ART

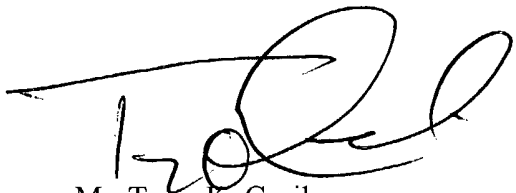
A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim 1 recited that the apparatus was "for mixing flowing developer material" and the body of the claim recited "means for mixing ..., said mixing means being stationary and completely submerged in the developer material". The claim was rejected over a reference which taught all the structural limitations of the claim for the intended use of mixing flowing developer. However, the mixer was only partially submerged in the developer material. The Board held that the amount of submersion is immaterial to the structure of the mixer and thus the claim was properly rejected.).

It is clear from the above, the that the manner of operating or using the device fails to differentiate an invention from that of the prior art. As explained in the rejection, the cited apparatuses have the ability to perform the claimed manner of using.

- Applicant's invention is concerned with reducing the total amount of disinfectant applied to fluid by dispensing only an amount necessary to properly treat the water (to avoid harmful byproducts and to maintain a certain level of free-chlorine) using a plurality of serially-placed injectors, wherein each injector is controlled by a device in response to a sensed condition. As shown in the rejection, each of the references teaches the same structure—a plurality of injectors, control valves, controller, and sensors—as the applicant does to solve the *same* problem. APPLICANT HAS NOT DEMONSTRATED ANY STRUCTURAL DIFFERENCE BETWEEN HIS CLAIMED APPARATUS INVENTION AND THAT OF THE APPLIED PRIOR ART.
- Applicants arguments that the references do not show an elongated passageway is unconvincing since the flow paths taught provide evidence of a fluid passageway. The structure of the passageway has been rejected with to the same degree of specificity as claimed (e.g applicant has not claimed a serpentine passageway as shown in the drawings).

8. Contact Information:

- Examiner Mr. Terry K. Cecil can be reached at (571) 272-1138 at the Carlisle campus in Alexandria, Virginia for any inquiries concerning this communication or earlier communications from the examiner. Note that the examiner is on the increased flextime schedule but can normally be found in the office during the hours of 8:30a to 4:30p, on at least four days during the week M-F.
- Wanda Walker, the examiner's supervisor, can be reached at (571) 272-1151 if attempts to reach the examiner are unsuccessful.
- The Fax number for this art unit for official faxes is 703-872-9306.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mr. Terry K. Cecil
Primary Examiner
Art Unit 1723

TKC
June 17, 2004